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REMARKS/ARGUMENTS

Claims

Claims 1, 2, 4-9, 13-15, 20 and 21 are pending in the application.

Claims 3, 11, 16-19 have been previously withdrawn.

Claims 1 to 21 are currently cancelled.

Claims 22-33 are new.

Claim Objections

The Applicant respectfully cancels claim 8. The objection thereto is therefore rendered obsolete.

Claim Rejections – 35 USC § 103

Claims 1, 2, 4-9, 13-15, 20 and 21 have been rejected under 35 USC §103(a) as being obvious over of the U.S. Patent No. 5,484,321 granted to Zenichi Ishimoto (hereinafter "Ishimoto"), in view of the U.S. Patent No. 6,932,442, granted to Kazutoshi Hori (hereinafter "Hori") and in further view of the U.S. Patent No. 6,176,557, granted to Yoshihiko Ono (hereinafter "Ono").

The Applicant respectfully cancels claims 1, 2, 4-9, 13-15, 20 and 21. In response to the objections of the Examiner, the Applicant is respectfully filling new claims 22 to 33.

New claims

In order to better distinguish its invention from the prior art, the Applicant is respectfully submitting new claims 22 to 33.

New independent claim 22 recites an elastomeric traction band comprising a band body having an inner sprocket and road wheels engaging surface and an outer ground engaging surface. The

inner surface comprises at least one row of guide horns which are longitudinally disposed and at least a first row of longitudinally aligned drive lugs. The drive lugs are drivingly engaged by the sprocket wheel whereas the guide horns are not drivingly engaged thereby. Also, both rows are laterally spaced apart, as shown in Fig. 7, to define a wheel path therebetween. The wheel path allows the passage of the wheels between both rows (see Fig. 5). The traction band also comprises tensile cords along its circumference (see Fig. 5).

Claim 22 further recites that the traction band comprises **resilient** guide horn reinforcements for preventing excessive **lateral deformation** of the guide lugs (see paragraph [0042]). The guide horn reinforcements each comprises a reinforcing portion and at least one stabilizing or support portion.

The stabilizing portion is generally embedded into the band body between the tensile cords and the inner surface of the band (see Fig. 5). Also, in order to provide adequate support, the stabilizing portion generally laterally extends over the entire width of the wheel path defined between the guide horns and the drive lugs (see Fig. 7).

Concerning the reinforcing portion, it is generally in the shape of an inverted V as shown in Fig. 5. The inverted V shaped structure provides more structural strength and rigidity than trapezoidal structures when the reinforcement is subjected to lateral forces. Still, the inverted V shaped structure allows a certain amount of deformation in order to absorb the lateral forces. Moreover, the inverted V reinforcement allows to have more elastomeric material between the lateral surfaces of the guide horns and the reinforcing portion. By having more elastomeric material, normal wear of the of guide horns won't uncover the reinforcing portions.

New independent claim 22 is considered patentably distinct from the cited prior art of Ishimoto, Hori and Ono.

The traction band shown in Ishimoto does comprise a band body having an inner surface and an outer surface. The traction band of Ishimoto also comprises rows of drive lugs and guide horns

longitudinally disposed on the inner surface. However, the traction band of Ishimoto is designed for small radio-controlled vehicles in the nature of toys and does not comprises guide horn reinforcements.

The traction band shown in Hori comprises a band body having an inner surface and an outer surface. As shown un Hori, the traction band is provided with a single row of drive lugs/guide horns. To provide reinforcement to the drive lugs/guide horns, reinforcements are embedded into the drive lugs/guide horns,

The traction band shown in Ono comprises a generally elastomeric band body having an inner surface and an outer surface. The traction band further comprises, embedded therein, **rigid core bars made of metal**. The core bars of Ono are provided with a laterally extending rigid base embedded in the band body and at least two **rigid** horns outwardly protruding on the inner surface. Each horn comprises a front and a rear surfaces which, in use, are covered with elastomeric material. The front and/or read surfaces of the horns are adapted to receive the longitudinal forces transmitted by the pins of the sprocket wheel.

The Examiner argued, for presently cancelled claim 1, that though the traction band of Ishimoto did not include guide horn reinforcements, it would have been obvious to use the reinforcements of Hori in the track of Ishimoto to obtain the present invention. This argument does not stand in view of new claim 22. First, the stabilizing portions of the reinforcements of Hori are located underneath the tensile cords whereas in the invention of the Applicant, the stabilizing portions are located over the tensile cords. Though the Examiner may argue that this difference would amount to a mere design choice, it is in fact not the case. The Applicant has found during tests that when the stabilizing portions are located under the cords, as in Hori, the elastomeric body of the traction band tends to delaminate since the stabilizing portions, which support a portion of the weight of the vehicle via the wheels, are themselves not supported enough. However, when the stabilizing portions are located over the cords, the cords provide additional support to the stabilizing portions, thereby preventing damages to the traction band.

Alternatively, the Examiner may also argue that putting the stabilizing portions over the cords is not new since Ono shows the same. However, with respect to Ono, it is clear from the description that the core bars and their respective base 11 are of solid and rigid construction and therefore provide little or no resilience. Yet, the Applicant has found during testing that solid and rigid stabilizing portions also tend to provoke delamination of the elastomeric band body since they create rigidity discontinuity in the band body. Indeed, due to the deformation of the band body itself during use, it has been found that resilient stabilizing portions are necessary to be able to absorb the temporary deformations of the band body. The nature and construction of the core bars of Ono would not permit such deformation and therefore could not be used in the track of the Applicant to obtain useful results.

Returning to Hori, the reinforcing portion of Hori defines a trapezoidal shape whereas the reinforcing portion of the Applicant defines an inverted V shape. Here again, the Examiner could argue that this would amount to a design choice. Yet, the shape of the reinforcing portion plays an important role. The lugs of Hori, which are provided with reinforcements, are mainly drive lugs also partially acting as guide horns. Yet, though they provide a certain amount of guiding, the lugs of Hori are mainly used as drive lugs as shown in Fig. 4a and 4b. Since they are used as drive lugs, the lugs of Hori are mainly subjected to longitudinal forces, i.e. the forces provided by the sprocket wheel. In this case, the shape of the reinforcing portion is not critical as shown by the numerous variants of Figs. 5, 6 and 7. However, in the case of the Applicant, the guide horns are mainly subjected to lateral forces since they are not drivingly engaged. In that case, the shape of the reinforcing portion will have a significant impact on the support the reinforcement will provide. The Applicant has found that an inverted V shaped reinforcing portion provides better support to the guide horn while still providing limited resilient lateral deflection to absorb a portion of the lateral forces.

Thus, even if the traction band of Ishimoto and Hori could be combined, which has not been clearly demonstrated, the guide horn reinforcements of the Applicant contain several limitations which, taken together, teach away from an hypothetical combination of Ishimoto and Hori.

In his rejection of former claim 1, the Examiner also included the teaching of Ono in the combined teachings of Ishimoto and Hori. First, it is far from obvious that a person skilled in the art would combine a traction band for toy radio-controlled vehicles and add therein metallic core bars. The nature of the track of Ishimoto does not allow the use of core bars. Concerning the teachings of Hori and Ono, the combination is also doubtful. As a matter of fact, there is absolutely no motivation to combine Hori and Ono since there is no point in adding reinforcements to drive lugs if the drive lugs are already made from a solid metallic horn merely covered with rubber to prevent noise.

In any case, the nature, shape and configuration of the core bars of Ono clearly do not allow resilient deformation. First, the horns 12 of Ono are solid and integrally moulded to the base 11. Second, the horns of Ono are configured to receive the longitudinal forces transmitted by the sprocket wheel. However, any person skilled in the art of traction bands will know that elastic deformation of the drive lugs is to be avoided since any elastic deformation wastes energy that could otherwise be transmitted to the track. Consequently, the horns of Ono are most probably design to allow an insignificant amount of resilient elastic deformation in order to provide an efficient energy transmission between the sprocket wheel and the track. Hence, since there is, for all practical purposes, no elastic deformation in the longitudinal direction, there is no point is having elastic deformation in the lateral direction. However, in the invention of the Applicant, the guide horn reinforcements will allow a certain amount of resilient elastic deformation since they are resilient.

Furthermore, Ono does not show nor teach the inverted V shaped reinforcing portion which is an important aspect of the Applicant's invention.

Consequently, due to the fact that the combination of the resilient reinforcements having inverted V shaped reinforcing portions extending in the guide horns and stabilizing portions laterally extending in the band body over the tensile cords and over the entire wheel path is not shown nor taught by Ishimoto, Hori and Ono, alone or combined, the Applicant respectfully believes that new claim 22 is fully patentable over the prior art.

Concerning claim 23, it recites that the stabilizing portion extends beyond the width of the wheel path as best shown in Fig. 7.

Claim 24 recites the embodiment of the present invention wherein the traction band comprises a second row of longitudinally aligned drive lugs which define a second wheel path with the row of guide horns. Claim 24 also recites that the guide horn reinforcements also comprise a second stabilizing portion laterally extending over the second wheel path. This embodiment is shown in Fig. 7.

Claim 25, as claim 23, recites that the second stabilizing portion extends beyond the width of the second wheel path as shown in Fig. 7.

Claim 26 recites that the first and second stabilizing portions are interconnected by the reinforcing portion so that the first and second stabilizing portions extend from each side of the reinforcing portion. This is best shown in Fig. 5.

Claim 27, similarly to former claim 4, recites that the reinforcing portions comprise longitudinal portions.

Claim 28, similarly to former claim 5, recites that the longitudinal portions are planar areas.

Claim 29, similarly to former claim 7, recites that the planar areas comprise rigidifying means.

Claim 30, similarly to former claim 8, recites that the rigidifying means are embossments.

Claim 31, similarly to former claim 13, recites the limitation that the material from which the guide horn reinforcements are made is resilient sheet-like material.

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Claim 32, similarly to former claim 14, recites the limitation that the material from which the guide horn reinforcements are made is metal.

Claim 33, similarly to former claim 15, recites the limitation that the material from which the guide horn reinforcements are made is plastic.

By virtue of claim dependency, since claims 23 to 32 all ultimately depend upon independent claim 22, they are also believed to be patentably distinct from the prior art.

Conclusion

Considering the above arguments, the Applicant respectfully requests that a timely Notice of Allowance be issued in this case for all pending claims. However, should it be found necessary or practical, the Applicant kindly invites the Examiner to telephone the undersigned, Applicant's agent of record, to facilitate the advancement of the present application.

Respectfully submitted,

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